

1     ABSTRACT OF THE DISCLOSURE

2             The invention encompasses methods for cleaning surfaces of wafers  
3     or other semiconductor articles. Oxidizing is performed using an oxidation  
4     solution which is wetted onto the surface. The oxidation solution can  
5     include one or more of: water, ozone, hydrogen chloride, sulfuric acid,  
6     or hydrogen peroxide. A rinsing step removes the oxidation solution and  
7     inhibits further activity. The rinsed surface is thereafter preferably  
8     subjected to a drying step. The surface is exposed to an oxide removal  
9     vapor to remove semiconductor oxide therefrom. The oxide removal vapor  
10    can include one or more of: acids, such as a hydrogen halide, for  
11    example hydrogen fluoride or hydrogen chloride; water; isopropyl alcohol;  
12    or ozone. The processes can use centrifugal processing and spraying  
13    actions.

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